Presentation Abstract

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Abstract Title:	**Stem-Cell Properties of Human Corneal Keratocytes**
Presentation Start/End Time:	Monday, May 04, 2009, 5:00 PM - 5:15 PM
Location:	Floridian Ballroom BCD
Reviewing Code:	159 cornea: stem cell - CO
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Keywords:	485 cornea: stroma and keratocytes, 498 development, 480 cornea: basic science
Abstract Body:	**Purpose:** To determine the stem cell properties of human corneal stromal keratocytes when challenged in the chick embryonic environment. **Methods:** Stromal keratocytes isolated from human corneas were injected along cranial neural crest migratory pathways and in the periocular mesenchyme in chick embryos. Localization Migration of the injected cells stromal keratocytes was determined at various stages of development by immunohistochemistry using human cell-specific markers. Differentiation of the human keratocytes into other neural crest-derived tissues was determined by immunohistochemistry with tissue cell-specific markers. **Results:** Human keratocytes injected along cranial neural crest pathways proliferated and migrated ventrally adjacent to host neural crest cells. They contributed to numerous neural crest-derived tissues including cranial blood vessels, ocular tissues, and cardiac cushion tissue mesenchyme. Keratocytes injected into the periocular mesenchyme region contributed to the corneal stroma and endothelial layers. **Conclusions:** Adult human corneal stromal keratocytes exhibit stem cell characteristics. They can be induced to form cranial neural crest derivatives, including other anterior ocular structures, when grafted into an embryonic environment.
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